Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (original) A method of proliferating a precursor cell comprising modulating the expression of FRS3 in the precursor cell.

2. (original) The method of claim 1 further comprising inducing the precursor cell to differentiate.

3. (currently amended) A method of treating a disorder in a patient characterized by the premature death or malfunction of a specific cell type, the method comprising one of:

(a) proliferating a precursor cell that is the precursor cell for the specific cell type, wherein said proliferating comprises modulating the expression of FRS3 in the precursor cell; and thereafter administering the precursor cell to the patient; or

(b) administering to the patient a precursor cell that is the precursor cell for the specific cell type wherein the expression of FRS3 has been modulated in the precursor cell and the precursor cell has increased levels of FRS3 expression relative to the levels of FRS3 expression prior to modulation.

4. (canceled)

5. (currently amended) The method of claim 3 ~~or claim 4~~ further comprising, in addition to step (a) or step (b), inducing the precursor cell to differentiate prior to administering.

6. (currently amended) The method of ~~any one of claims~~ claim 1 ~~to 5~~, wherein the precursor cell is chemically or genetically modified to express FRS3 at a greater level than an unmodified precursor cell.

7. (currently amended) The method of ~~any one of claims~~ claim 3 ~~to 6~~ wherein the disorder is cancer, leukemia, Parkinson's disease, Alzheimer's disease, ALS, CNS damage, spinal cord injury, Multiple Sclerosis, cardiac damage, liver damage, kidney damage, pancreatic damage, retinal damage, intestinal damage, skeletal muscle damage, Muscular dystrophy, lung damage or diabetes.

8. (currently amended) The method of ~~any one of claims~~ claim 3 ~~to 7~~ wherein the administering comprises surgical implantation or injection.

9. (currently amended) The method of ~~any one of claims~~ claim 3 ~~to 8~~ wherein the precursor cell has increased levels of endogenous FRS3 as a result of modulation of FRS3.

10. (currently amended) The method of ~~any one of claims~~ claim 3 ~~to 8~~ wherein the precursor cell has increased levels of exogenous FRS3 as a result of modulation of FRS3.

11. (original) The method of claim 10 wherein the precursor cell is transfected with a vector comprising the exogenous nucleic acid molecule encoding FRS3.

12. (original) The method of claim 11 wherein the vector is a retroviral vector, a lentiviral vector or an Adenoviral vector.

13. (currently amended) The method of ~~any one of claims~~ claim 1 ~~to 12~~ wherein the precursor cell further comprises a nucleic acid encoding a therapeutic transgene or a therapeutic peptide.

14. (currently amended) The method of ~~any one of claims~~ claim 1 ~~to 13~~ further comprising treating the precursor cell with an additional growth factor.

15. (original) The method of claim 14 wherein the additional growth factor is fibroblast growth factor or a neurotrophin.

16. (currently amended) The method of ~~any one of claims~~ claim 1 ~~to 15~~ wherein the FRS3 is human FRS3 or mouse FRS3.

17. (original) The method of claim 16 wherein the FRS3 is (i) a protein comprising the amino acid sequence of SEQ ID NO.:1 or SEQ ID NO.:2; (ii) a fragment of SEQ ID NO.:1 or SEQ ID NO.:2, the fragment possessing substantially the ability to induce or enhance proliferation of the precursor cell or to cause the precursor cell to respond to growth factors; or (iii) an amino acid sequence possessing 90% identity to SEQ ID NO.:1 or SEQ ID NO.:2 and possessing substantially the ability to induce or enhance proliferation of the precursor cell or to cause the precursor cell to respond to growth factors.

18. (currently amended) The method of ~~any one of claims~~ claim 1 ~~to 17~~ wherein the precursor cell is derived from neuronal tissue, peripheral blood, bone marrow, cardiac muscle, liver, retina, skeletal muscle, kidney, pancreatic, spleen, intestinal, lung, skin, umbilical cord cells including umbilical vein endothelial cells, or embryonic cells including embryonic stem cells.

19. (original) A precursor cell expressing FRS3 wherein the expression of FRS3 has been modulated in the precursor cell and the precursor cell has increased levels of FRS3 expression relative to the levels of FRS3 expression prior to modulation.

20. (original) The precursor cell of claim 19 further comprising a nucleic acid encoding a therapeutic transgene or a therapeutic peptide.

21. (currently amended) The precursor cell of claim 19 ~~or claim 20~~ wherein the FRS3 is human FRS3 or mouse FRS3.

22. (original) The precursor cell of claim 21 wherein the FRS3 is (i) a protein comprising the amino acid sequence of SEQ ID NO.:1 or SEQ ID NO.:2; (ii) a fragment of SEQ ID NO.:1 or SEQ ID NO.:2, the fragment possessing substantially the ability to induce or enhance proliferation of the precursor cell or to cause the precursor cell to respond to growth factors; or (iii) an amino acid sequence possessing 90% identity to SEQ ID NO.:1 or SEQ ID NO.:2 and possessing substantially the ability to induce or enhance proliferation of the precursor cell or to cause the precursor cell to respond to growth factors.

23. (currently amended) The precursor cell of ~~any one of claims~~ claim 19 ~~to 22~~ wherein the precursor cell is derived from neuronal tissue, peripheral blood, bone marrow, cardiac muscle, liver, retina, skeletal muscle, kidney, pancreatic, spleen, intestinal, lung, skin, umbilical cord cells including umbilical vein endothelial cells, or embryonic cells including embryonic stem cells.

24. (currently amended) A progeny cell of the precursor cell of ~~any one of claims~~ claim 9 ~~to 23~~.

25. (currently amended) A pharmaceutical composition comprising the precursor cell of ~~any one of claims~~ claim 19 ~~to 23 or the progeny cell of claim 24~~ and a pharmaceutically acceptable carrier.

26. (currently amended) The method of claim 1 ~~or claim 2~~ wherein modulating the expression of FRS3 comprises increasing expression levels of endogenous FRS3 in the precursor cell.

27. (currently amended) The method of claim 1 ~~or claim 2~~ wherein modulating the expression of FRS3 comprises expressing in the precursor cell an exogenous nucleic acid molecule encoding FRS3.

28. (original) The method of claim 27 wherein modulating the expression of FRS3 comprises transfecting the precursor cell with a vector comprising the exogenous nucleic acid molecule encoding FRS3.

29. (original) The method of claim 28 wherein the vector is a retroviral vector, a lentiviral vector or an Adenoviral vector.

30. (new) The method of claim 3, wherein the precursor cell is chemically or genetically modified to express FRS3 at a greater level than an unmodified precursor cell.

31. (new) The method of claim 3 wherein the precursor cell further comprises a nucleic acid encoding a therapeutic transgene or a therapeutic peptide.

32. (new) The method of claim 3 further comprising treating the precursor cell with an additional growth factor.

33. (new) The method of claim 32 wherein the additional growth factor is fibroblast growth factor or a neurotrophin.

34. (new) The method of claim 3 wherein the FRS3 is human FRS3 or mouse FRS3.

35. (new) The method of claim 34 wherein the FRS3 is (i) a protein comprising the amino acid sequence of SEQ ID NO.:1 or SEQ ID NO.:2; (ii) a fragment of SEQ ID NO.:1 or SEQ ID NO.:2, the fragment possessing substantially the ability to induce or enhance proliferation of the precursor cell or to cause the precursor cell to respond to growth factors; or (iii) an amino acid sequence possessing 90% identity to SEQ ID NO.:1 or SEQ ID NO.:2 and possessing substantially the ability to induce or enhance proliferation of the precursor cell or to cause the precursor cell to respond to growth factors.

36. (new) The method of claim 3 wherein the precursor cell is derived from neuronal tissue, peripheral blood, bone marrow, cardiac muscle, liver, retina, skeletal muscle, kidney, pancreatic, spleen, intestinal, lung, skin, umbilical cord cells including umbilical vein endothelial cells, or embryonic cells including embryonic stem cells.

37. (new) A pharmaceutical composition comprising the progeny cell of claim 24 and a pharmaceutically acceptable carrier.